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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/088,110	03/15/2002	Kazufumi Nishida	43888-126	8047

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EXAMINER

MERCADO, JULIAN A

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 07/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/088,110

Applicant(s)

NISHIDA ET AL.

Examiner

Julian Mercado

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5-7,9,10 and 12-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1,6,7,9,10 and 12-14 is/are rejected.
- 7) ☐ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3-15-02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Art Unit: 1745

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 14 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 is deemed indefinite as it is dependent upon a canceled base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 6, 7, 9, 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neutzler (U.S. Pat. 5,776,624) in view of Hwang et al. (U.S. Pat. 6,090,228)

Regarding independent claims 1 and 6, Neutzler is relied upon to teach the claimed inventive concept of a separator plate comprising a metal plate [91] or [92] with an oxidation-resistant conductive film [94] or [96] covering a surface of the metal plate. (Figure 5, col. 5 line 19-37) The conductive film comprises a nitride of Ti, i.e. titanium nitride, *inter alia*. A fair reading of applicant's disclosure on page 8 is noted to characterize titanium nitride as being an interstitial compound. (also applies to claim 7)

Regarding claims 12 and 13, the separator plate has grooves [66] sealed by gasket [34, 36, 38, 40] for gas channels [74] and [76]. (Figures 1 and 2, col. 4 line 30-59)

Neutzler does not explicitly teach a diffused layer resulting from diffusion of the conductive film material at an interface between the separator plate metal plate and the conductive film. However, Hwang et al. teaches a diffused layer between a separator plate metal plate and a deposited conductive film. (col. 6 line 3-37, also applies to claim 10) The skilled artisan would find obvious to employ a diffusion layer in Neutzler's invention for reasons such as to enhance the anti-corrosive properties of the separator plate. (col. 7 line 49-63)

As to claim 9, by "change in a component ratio" it appears to the examiner that applicant intends to claim a compositional gradient. To this extent, Hwang et al. teaches that the formed diffused layer is 25-75% of the first element and 25-75% of the second element (in Hwang's example, nickel and aluminum, respectively). (col. 7 line 55-60) Thus, the skilled artisan would find obvious that a change in a component ratio of the conductive film would naturally flow as a result of the formation of the diffusion layer.

Allowable Subject Matter

Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record and to the examiner's knowledge do not teach or render obvious at least to the skilled artisan the instant invention regarding an island pattern of conductive film wherein the corrosion-resistant film is formed in a portion of the metal plate where the island pattern of conductive film is not formed.

The examiner notes that although a dependent claim to independent claim 6 (corresponding to the subject matter of claim 5) is not presently submitted, independent claim 6 may be similarly amended in order to place it in allowable form.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Spear Jr. et al. is cited to teach an interstitial compound such as a titanium separator passivated with nitrogen to form titanium nitride. (col. 5 line 6 et seq.) Matsumura et al. (U.S. Pat. 4,794,055) is cited to teach thermal diffusion of metal alloy materials. (col. 5 line 62 et seq.)

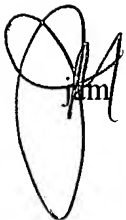
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.

Art Unit: 1745

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

A handwritten signature in black ink, appearing to be "Patrick J. Ryan", written over a circular stamp or mark.

Patrick J. Ryan
Supervisory Patent Examiner
Technology Center 1700